

**WHAT IS CLAIMED IS:**

1. A multi-fan assembly having plural member fans capable of revolving around the common central shaft and oscillating vertically, comprising:

a down rod assembly including a down rod and a shaft, the down rod having a first end for fixing to ceiling wall and having a second end provided with a canopy, inside of the canopy a transmission unit being disposed, the shaft having a top end connected to the second end of the down rod and covered by the canopy;

a rotary assembly, via a shaft bearing, fixed to the lower end of the shaft of the down rod assembly, at both sides of the rotary assembly provided with a fixed arm respectively, on each fixed arm provided with a member fan for providing cool air at a full circumferential angle in case of 360 degree-revolution of the rotary assembly;

two vertical oscillating means disposed between the fixed arm of the rotary assembly and the member fans, each vertical oscillating means comprising a servomotor, a gear cluster, a crank, a connecting rod and a rocker lever, the servomotor together with the gear cluster disposed at the rear end of the motor of the rotary assembly by virtue of a bracket, the crank having a first end for connecting with the gear cluster, the connecting rod fixed to a second end of the crank, the rocker lever having a first end connected to the connecting rod and a second end fixed to the fixed arm of the rotary assembly, the servomotor of the vertical oscillating means applied to effecting differential rotation of the gear cluster so as to drive the crank, and thus further driving the connecting rod as well as the rocker lever for effecting vertical oscillation of the respective member fans;

a speed control device disposed between the rotary assembly and

the shaft of the down rod assembly, which including a motor, a gear cluster and a current control unit, the current control unit electrically connected with the motor and then together with the motor as well as the gear cluster to be mounted together on a mounting bracket, the mounting bracket fixed to the rotary assembly, the gear cluster meshing closely with a central axial gear which located on a lower portion of the shaft, the current control unit serving to control output current, such that during the operation of the motor, a changeable and controllable revolution torque can be produced by the differential motion of the gear cluster, such that the revolution speed can be control.

2. The multi-fan assembly as claimed in claim 1, wherein each member fans of the rotary assembly is fixed to the fixed arm respectively by virtue of a hanging device, the hanging device having low friction for enabling the free vertical oscillation of the member fans.

3. The multi-fan assembly as claimed in claim 1, wherein the servomotor in the oscillating means can be electrically connected to a current control unit for controlling the frequency of the vertical oscillation of the member fans.